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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/916,179

07/25/2001

David de Graaf

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21005

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10/17/2002

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

EXAMINER

CHAKRABARTI, ARUN K

ART UNIT

PAPER NUMBER

1634

8

DATE MAILED: 10/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,179

Applicant(s)

Graaf

Examiner

Arun Chakrabarti

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Sep 16, 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claims 39-70 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jan 22, 2002 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5 6) ☐ Other:

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DETAILED ACTION

Election/Restriction

1. Applicant's election of Group I, corresponding to claims 1-38 in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Specification

2. Claims 2-13, 15-19, 21-32, and 34-38 begin with the article "A", which is suggested to be changed to "The".

Claim Rejections - 35 USC § 112

3. Claims 13, 19, 32, and 38 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling because of improper incorporation of essential subject matter by reference.

The attempt to incorporate essential subject matter into this application by reference to a list of genes only with some Genbank Accession Numbers is improper because the reference is neither a U.S. Patent application or a U.S. Patent and merely a printed database.

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Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CAR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CAR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CAR 3.73(b).

5. Claims 1-3, 14-16, 20-22, and 33-35 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 111 of U.S. Patent Application No. 09/544,627. Although the conflicting claims are not identical, they are not patentably distinct from each other because the broad claim of diagnosing any disease of any individual by comparing any kind of change in the gene expression as compared to control, as

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claimed in 111 of U.S. Patent Application No. 09/544,627, encompasses the instant claims of identifying intestinal or colonic polyp either by determining increased or decreased expression of the gene

6. Claims 4-7, 10-12, 17-18, 23-26, 29-31, and 36-37 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes (U.S. Patent 5,403,717) (April 4, 1995).

Claim 111 of U.S. Patent Application No. 09/544,627 teach the method of claims 1-3, 14-16, 20-22, and 33-35 as described above.

Claim 111 of U.S. Patent Application No. 09/544,627 do not teach the method wherein the gene expression product is DNA, mRNA or polypeptide which are detected by utilizing specific hybridization probes and antibodies.

Holmes teach the method wherein the gene expression product is DNA, mRNA or polypeptide which are detected by utilizing specific hybridization probes and antibodies (Examples 11 and 10 respectively).

Claim 111 of U.S. Patent Application No. 09/544,627 do not teach the method wherein one or more informative genes is selected from inflammation genes.

Holmes teaches a method, wherein one or more informative genes is selected from inflammation genes (Column 14, line 65 to Column 15, line 19)

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It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine and substitute the method wherein the gene expression product is DNA, mRNA or polypeptide which are detected by utilizing specific hybridization probes and antibodies of Holmes in the method of claims 1-152 of U.S. Patent No. 6,235,480 B1, since Holmes states, "This forms the basis of a method for diagnostic or prognostic screening of individuals which would represent a significant improvement over current technology (Column 2, lines 50-53)". An ordinary practitioner would have been motivated to combine and substitute the method wherein the gene expression product is DNA, mRNA or polypeptide which are detected by utilizing specific hybridization probes and antibodies of Holmes in the method of claims 1-152 of U.S. Patent No. 6,235,480 B1 in order to achieve the express advantages, as noted by Holmes, of a method that forms the basis for diagnostic or prognostic screening of individuals which would represent a significant improvement over current technology.

7. Claims 8-9, and 27-28 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes (U.S. Patent 5,403,717) (April 4, 1995) further in view of Arnold et al. (U.S. Patent 6,423,535 B1) (July 23, 2002)..

Claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes teach the claims 4-7, 10-12, 17-18, 23-26, 29-31, and 36-37 as described above.

Claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes do not teach a method wherein the gene expression profile is determined utilizing oligonucleotide microarrays.

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Arnold et al. teach a method wherein the gene expression profile is determined utilizing oligonucleotide microarrays (Column 7, lines 7-24 and Examples 1 and 3).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine and substitute a method wherein the gene expression profile is determined utilizing oligonucleotide microarrays of Arnold et al. in the method of Claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes since Arnold et al. states, "The invention thus provides quantitative information on each element of the microarray. Another advantage of the invention is that the hybridization of the probe sequence and the standard sequences is not competitive, thereby reducing noise in the results (Column 7, lines 19-24)". An ordinary practitioner would have been motivated to combine and substitute a method wherein the gene expression profile is determined utilizing oligonucleotide microarrays of Arnold et al. in the method of Claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes in order to achieve the express advantages, noted by Arnold et al., of a method that provides quantitative information on each element of the microarray along with another advantage, wherein the hybridization of the probe sequence and the standard sequences is not competitive, thereby reducing noise in the results.

8. Claims 13, 19, 32, and 38 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes (U.S. Patent 5,403,717) (April 4, 1995) further in view of Lee et al. (Hepatology, (1994), Vol. 19 (3), pages 656-665).

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Claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes teach the claims 4-7, 10-12, 17-18, 23-26, 29-31, and 36-37 as described above.

Claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes do not teach a method wherein one or more informative genes is selected from the group consisting of the genes in Figures 1A-1U.

Lee et al. teach a method wherein one or more informative genes is selected from the group consisting of the genes in Figures 1A-1U (Genbank Accession Number X67493; Abstract, Materials and Methods and Figures 1-2).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine and substitute the method wherein one or more informative genes is selected from the group consisting of the genes in Figures 1A-1U. of Lee et al. in the method of Claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes since Lee et al. states, "We found that IGFBP-1 gene has several interesting potential regulatory sites and that IGFBP-1 mRNA and protein levels are increased in liver tissue and serum during liver regeneration (Page 657, Column 1, last sentence of third paragraph)". An ordinary practitioner would have been motivated to combine and substitute the method wherein one or more informative genes is selected from the group consisting of the genes in Figures 1A-1U. of Lee et al. in the method of Claim 111 of U.S. Patent Application No. 09/544,627 in view of Holmes in order to achieve the express advantages, noted by Lee et al., of a gene which has several

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interesting potential regulatory sites and the expression levels of which are increased in liver tissue and serum during liver regeneration.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

10. Claims 1, 4-7, 10-12, 14, and 17-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Reinhard et al. (U.S. Patent 6,432,668 B1) (August 13, 2002).

Reinhard et al teach a method of identifying an intestinal polyp comprising the steps of:

a) obtaining a nucleic acid sample derived from intestinal tissue; and

b) determining a gene expression profile from a gene expression product of at least one informative gene having increased expression in an intestinal polyp relative to a control, the gene expression product being a DNA, mRNA, or polypeptide,

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wherein increased expression of the gene in the sample is indicative of an intestinal polyp (Column 20, lines 46-67 and Column 2, lines 36-44 and Column 9, lines 49-52).

Reinhard et al inherently teach a method, wherein the gene expression profile is determined utilizing specific hybridization probes and antibodies (Column 20, lines 46-67 and Column 2, lines 36-44 and Column 9, lines 49-52).

Reinhard et al teach a method, wherein one or more informative genes is selected from cell cycle genes (Column 3, lines 5-12).

11. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-7, 10-12, and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Holmes (U.S. Patent 5,403,717) (April 4, 1995).

Holmes teaches a method of identifying an intestinal polyp comprising the steps of:

- a) obtaining a nucleic acid sample derived from intestinal tissue; and
- b) determining a gene expression profile from a gene expression product of at least one informative gene having increased expression in an intestinal polyp relative to a control, the gene expression product being a DNA, mRNA, or polypeptide,

wherein increased expression of the gene in the sample is indicative of colonic (part of an intestine) polyp (Examples 1-4 and Column 14, line 65 to Column 15, line 19).

Holmes teaches a method, wherein the gene expression profile is determined utilizing specific hybridization probes and antibodies (Examples 11 and 10 respectively).

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Holmes teaches a method, wherein one or more informative genes is selected from inflammation genes (Column 14, line 65 to Column 15, line 19).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CAR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 8-9 are rejected under 35 U.S.C. 103(a) over Reinhard et al. (U.S. Patent 6,432,668 B1) (August 13, 2002) or in the alternative Holmes (U.S. Patent 5,403,717) (April 4, 1995) in view of Arnold et al. (U.S. Patent 6,423,535 B1) (July 23, 2002).

Reinhard et al. or in the alternative Holmes teaches the claims 1 and 4-7 as described above.

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Reinhard et al. or in the alternative Holmes does not teach a method wherein the gene expression profile is determined utilizing oligonucleotide microarrays.

Arnold et al. teach a method wherein the gene expression profile is determined utilizing oligonucleotide microarrays (Column 7, lines 7-24 and Examples 1 and 3).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine and substitute a method wherein the gene expression profile is determined utilizing oligonucleotide microarrays of Arnold et al. in the method of Reinhard et al. or in the alternative Holmes, since Arnold et al. states, "The invention thus provides quantitative information on each element of the microarray. Another advantage of the invention is that the hybridization of the probe sequence and the standard sequences is not competitive, thereby reducing noise in the results (Column 7, lines 19-24)". An ordinary practitioner would have been motivated to combine and substitute a method wherein the gene expression profile is determined utilizing oligonucleotide microarrays of Arnold et al. in the method of Reinhard et al. or in the alternative Holmes, in order to achieve the express advantages, noted by Arnold et al., of a method that provides quantitative information on each element of the microarray along with another advantage, wherein the hybridization of the probe sequence and the standard sequences is not competitive, thereby reducing noise in the results.

15. Claims 13, and 19 are rejected under 35 U.S.C. 103(a) over Reinhard et al. (U.S. Patent 6,432,668 B1) (August 13, 2002) or in the alternative Holmes (U.S. Patent 5,403,717) (April 4, 1995) in view of Lee et al. (Hepatology, (1994), Vol. 19 (3), pages 656-665).

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Reinhard et al. or in the alternative Holmes teaches the claims 1 and 4-7 as described above.

Reinhard et al. or in the alternative Holmes do not teach a method wherein one or more informative genes is selected from the group consisting of the genes in Figures 1A-1U.

Lee et al. teach a method wherein one or more informative genes is selected from the group consisting of the genes in Figures 1A-1U (Genbank Accession Number X67493; Abstract, Materials and Methods and Figures 1-2).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine and substitute the method wherein one or more informative genes is selected from the group consisting of the genes in Figures 1A-1U. of Lee et al. in the method of Reinhard et al. or in the alternative Holmes since Lee et al. states, "We found that IGFBP-1 gene has several interesting potential regulatory sites and that IGFBP-1 mRNA and protein levels are increased in liver tissue and serum during liver regeneration (Page 657, Column 1, last sentence of third paragraph)". An ordinary practitioner would have been motivated to combine and substitute the method wherein one or more informative genes is selected from the group consisting of the genes in Figures 1A-1U. of Lee et al. in the method of Reinhard et al. or in the alternative Holmes in order to achieve the express advantages, noted by Lee et al., of a gene which has several interesting potential regulatory sites and the expression levels of which are increased in liver tissue and serum during liver regeneration.

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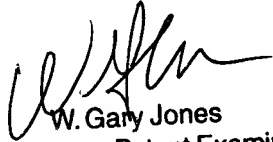
Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun Chakrabarti whose telephone number is (703) 306-5818. The examiner can normally be reached on 7:00 AM-4:30 PM from Monday to Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (703) 308-1152. The fax phone number for this Group is (703) 305-7401. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group analyst Chantae Dessau whose telephone number is (703)605-1237.

Arun Chakrabarti,

Patent Examiner,

September 26, 2002


W. Gary Jones
Supervisory Patent Examiner
Technology Center 1600